

COVID-19: Hospitalization Risk

Preliminary Analysis of Cases Dec 14 – Jan 6
(Hospitalizations up to Jan 10)

January 21, 2022



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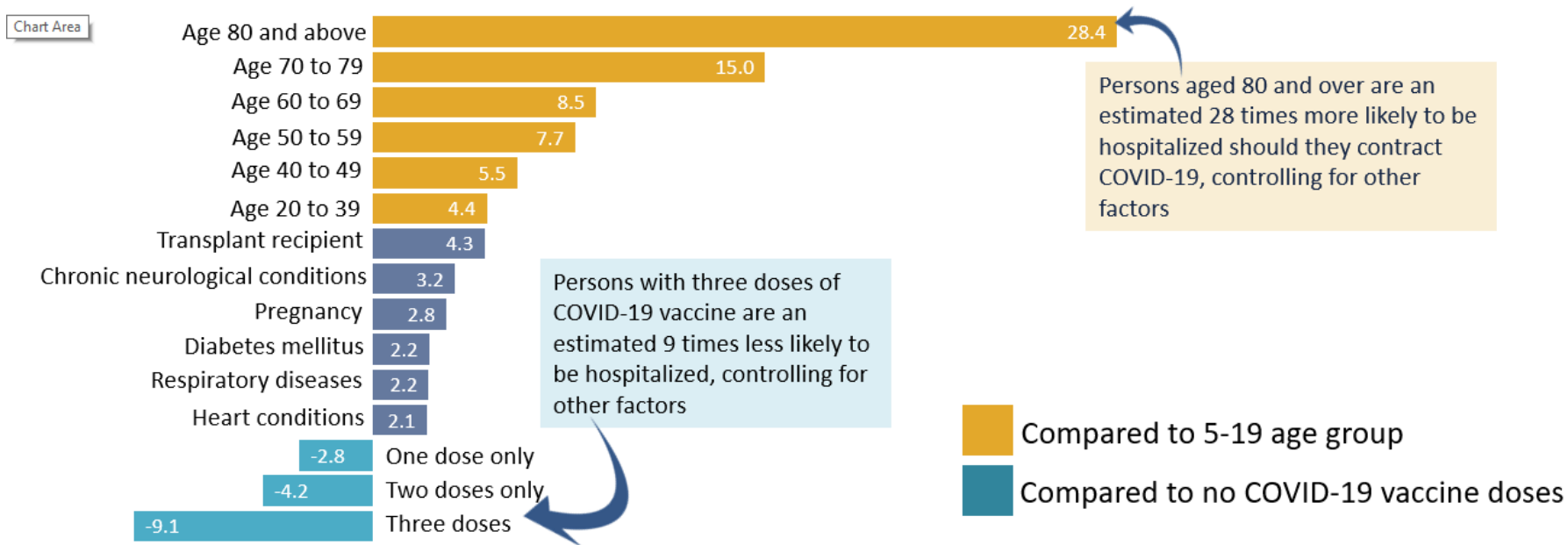


COVID-19 Hospitalization Risk

- 606 hospitalizations out of 49,713 confirmed COVID-19 cases (Dec 14- Jan 6) were analyzed for risk factors.
- Hospitalization rate among confirmed cases during this period was 1.2%, (*compared with 6.2% Sept 30 – Oct 27*).

What puts a person at greater risk for COVID-19 hospitalization?

Age is the largest risk factor for COVID-19 hospitalization; each dose of vaccine provides added protection. Below are Times more likely (than a person under age 20) estimates.



Hospitalization by Risk Categories

Models (Sept 30 – Oct 27) and (Dec 14 – Jan 6)

| COVID-19 hospitalization risk stratified by risk category | | | | | | | |
|---|----------------------|------------------------|-------------|----------------|----------------------|------------------------|-------------|
| Sep 30 - Oct 27 | | | | Dec 14 – Jan 6 | | | |
| Risk category | Hospitalization rate | Population (thousands) | Percentile | Risk category | Hospitalization rate | Population (thousands) | Percentile |
| Very High | 58.3% | 257 | 0.00-5.00 | Very High | 9.1% | 257 | 0.00-5.00 |
| High | 14.7% | 772 | 5.01-20.00 | High | 2.3% | 772 | 5.01-20.00 |
| Medium | 2.3% | 1,545 | 20.01-50.00 | Medium | 0.9% | 1,543 | 20.01-50.00 |
| Low/very low | 0.4% | 2,576 | 50.01-100 | Low/very low | 0.3% | 2,572 | 50.01-100 |
| B.C. | 6.2% | 5,152 | | B.C. | 1.24% | 5,144* | |

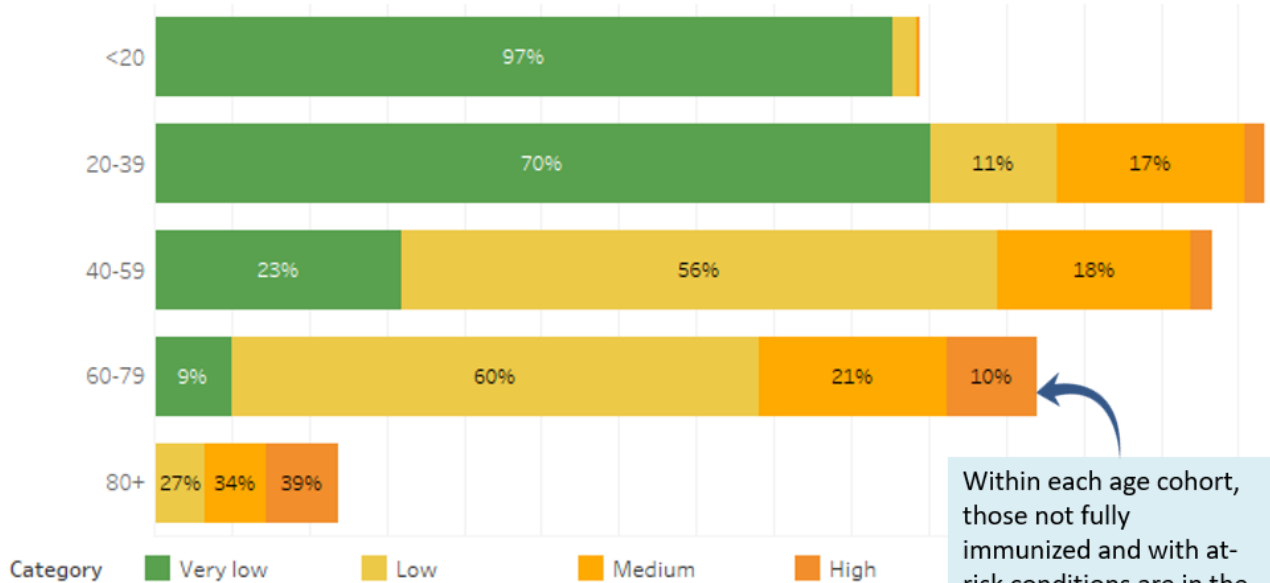
*B.C. population have minor differences due to different Client Roster versions used in the analysis and inclusion/exclusion applied in the model due to out of BC, not linkable to Client Roster, unknown CHSA/age/sex, and variables used in the model

Interpretation:

The risk of hospitalization among confirmed cases is much lower in the current wave compared to before, even among the population at high risk of hospitalization from COVID-19.

Risk of COVID-19 Hospitalization *(by Age Group)*

B.C. population in each hospitalization risk category by age group



Within each age cohort, those not fully immunized and with at-risk conditions are in the highest risk category

| Risk category | Average hospitalization risk* | Percentile |
|---------------|-------------------------------|-------------|
| High | 9.1% | 0.00-5.00 |
| Medium | 2.2% | 5.01-20.00 |
| Low | 0.8% | 20.01-50.00 |
| Very low | 0.3% | 50.01-100 |

*Percentages (in the table above) represent the estimated likelihood a patient would be hospitalized should they be confirmed as having contracting COVID-19, based on logistic modeling.

Estimates based on observed odds ratios associated with COVID-19 hospitalization among confirmed cases Dec 14, 2021 – Jan 6, 2022. **Average hospitalization risk across B.C. was 1.2%**

Estimates are expected to change as more data becomes available.

Risk of COVID-19 Hospitalization

Analysis from logistic regression on confirmed cases and hospitalizations Dec 14 – Jan 4.

| # of at-risk conditions | Age group | Female | | | | Male | | | |
|-------------------------|-----------|---------|--------|---------|---------|---------|--------|---------|---------|
| | | 0 Doses | 1 Dose | 2 Doses | 3 Doses | 0 Doses | 1 Dose | 2 Doses | 3 Doses |
| 0 at-risk conditions | <20 | 0.3% | 0.1% | 0.1% | 0.0% | 0.4% | 0.2% | 0.1% | 0.0% |
| | 20-39 | 1.5% | 0.5% | 0.4% | 0.2% | 1.8% | 0.7% | 0.4% | 0.2% |
| | 40-49 | 1.9% | 0.7% | 0.4% | 0.2% | 2.3% | 0.8% | 0.5% | 0.3% |
| | 50-59 | 2.7% | 1.0% | 0.6% | 0.3% | 3.2% | 1.2% | 0.8% | 0.4% |
| | 60-69 | 2.9% | 1.1% | 0.7% | 0.3% | 3.6% | 1.3% | 0.8% | 0.4% |
| | 70-79 | 5.2% | 1.8% | 1.2% | 0.6% | 6.3% | 2.2% | 1.5% | 0.7% |
| | 80+ | 9.5% | 3.3% | 2.2% | 1.1% | 11.8% | 4.0% | 2.7% | 1.3% |
| 1-2 at-risk conditions | <20 | 0.9% | 0.3% | 0.2% | 0.1% | 1.2% | 0.4% | 0.3% | 0.1% |
| | 20-39 | 4.5% | 1.7% | 1.1% | 0.5% | 4.7% | 1.8% | 1.1% | 0.6% |
| | 40-49 | 5.2% | 1.9% | 1.2% | 0.6% | 5.9% | 2.2% | 1.3% | 0.7% |
| | 50-59 | 6.8% | 2.6% | 1.6% | 0.8% | 8.3% | 3.2% | 1.9% | 1.0% |
| | 60-69 | 7.5% | 3.0% | 1.8% | 0.9% | 9.5% | 3.6% | 2.2% | 1.1% |
| | 70-79 | 13.9% | 5.4% | 3.3% | 1.6% | 17.2% | 6.9% | 4.2% | 2.0% |
| | 80+ | 26.2% | 9.7% | 6.2% | 2.9% | 33.9% | 13.1% | 8.1% | 3.9% |
| 3+ at-risk conditions | <20 | 5.5% | 1.8% | 1.3% | 0.5% | 7.3% | 1.8% | 1.4% | 1.4% |
| | 20-39 | 23.0% | 10.6% | 5.1% | 2.9% | 25.2% | 11.0% | 6.6% | 3.6% |
| | 40-49 | 26.2% | 10.6% | 5.8% | 3.6% | 35.6% | 8.3% | 6.5% | 4.0% |
| | 50-59 | 36.0% | 13.2% | 7.7% | 4.3% | 37.0% | 12.3% | 8.9% | 5.1% |
| | 60-69 | 33.2% | 14.8% | 7.6% | 3.9% | 40.3% | 16.2% | 9.4% | 5.0% |
| | 70-79 | 50.1% | 23.2% | 12.8% | 5.9% | 59.6% | 26.6% | 15.9% | 7.5% |
| | 80+ | 71.9% | 31.8% | 20.7% | 9.4% | 83.7% | 43.8% | 26.3% | 12.7% |

Model estimates* of the proportion of cases that would result in hospitalization by demographic group and vaccine status

Hospitalization risk for younger people with two or more doses approaches zero

Even with 3 doses, substantial risk observed for those over 80+ (over 10%) when multiple risk conditions present

*Point estimates expected to change as more data becomes available. Differences between same-colored cells may not be statistically significant.

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